

EXHIBIT 8



Data Analytics | Statistics | Actuarial Sciences

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Administración de los Sistemas de Retiro
Pension Revision for Act 447 Police and Other High Risk Employees
Following the Enactment of Act 81-2020

INTRODUCTION

Integrum, LLC (Integrum) was previously engaged by the Administración de los Sistemas de Retiro (ASR) to provide a projection of the actuarial cost over the next 30 years of an initiative to revise pension benefits of Act 447 state police members. The police pension revision initiative became part of the Senate Bill 1623, which later became enacted into Act 81-2020, albeit not without some modifications.

The most important change introduced by Act 81-2020 was that the program was extended to other Act 447 high-risk employees. Because of the significant increase in the number eligible participants resulting from this modification, the ASR was prompted to engage Integrum again, this time to assess how the actuarial cost projection was affected by the new provisions of Act 81-2020. The results of our assessment are included in this memorandum.

BACKGROUND

Throughout the following we will reference our memorandum dated from September 10, 2019, and titled **Pension Revision for Act 447 Police Members**, which contains the actuarial basis for the police pension revision initiative as originally presented in Senate Bill 1623. The provisions of the Bill relevant to the determination of our actuarial assumptions are the following:

- Eligible participants are Act 447 state police members
- Under the revised pension, Act 447 state police would receive a pension benefit equivalent to 55% of the salary earned as of June 30, 2017.

- Additionally, eligible members would receive a monthly \$100 health insurance subsidy, which is to last for perpetuity.

Over 1,200 police members were expected to benefit from this pension revision, which would have an actuarial cost of \$89 million over a 30-year period (in present value terms).

Act 81-2020 introduced changes to Senate Bill 1623, which are presented side-by-side below.

Provision	Senate Bill 1623	Act 81-2020
Eligibility requirement	Act 447 state police	Extended to include other Act 447 high risk employees
Years of employment	20 years or more	20 years or more
Pension benefit	All employees receive 55% of salary as of June 30, 2017	<ul style="list-style-type: none"> •Employees aged 55-57: 50% of final salary •Employees aged 58: 55% of final salary
Health benefit	\$100 per month for perpetuity	\$100 per month for perpetuity

DATA, METHODOLOGY AND ASSUMPTIONS

The ASR provided Integrum with January 2020 census data for Act 447 police members and other high-risk employees. The data includes information such current salary, date of birth, hiring date, employer, accrued retirement benefit under Act 447, accrued retirement benefit under Act 3, and other. The data was reviewed for reasonableness and consistency, but it was not audited or otherwise checked for accuracy.

Although our initial cost projection used data from August 2019, inspection of the updated data showed there was no material difference in the number and demographic characteristics of the underlying Act 447 police population. In terms of the data used to make our projections, the important change introduced by Act 81-2020 was that the program was extended to other Act 447 high-risk employees, which resulted in the inclusion in our calculation of over 500 employees that had not been previously considered. The total number of Act 447 employees that now stand to benefit from the pension revision initiative is just under 1,700.

We followed the same methodology as in our previous report to quantify the actuarial cost from the pension revision. Payroll expenses and retirement benefit payments over the next 30 years were modeled for each Act 447 state police and high-risk employee. Payroll and retirement benefit payments are adjusted to include mortality assumptions. Total expense per police and high-risk employee is defined to be the sum of payroll expenses and retirement benefit payments. For the purpose of this analysis, the existing accrued retirement benefit for each Act 447 employee is defined to be the sum of the benefits under the Act 447 defined benefit pension plan and the Act 3 contribution account plan. Fringe benefits are included in total expenses.

The analysis includes the impact of a recently passed legislation granting a salary increase of approximately 14% to law enforcement officers.

A thirty-year period was chosen to present our projections because of the particular cash flow of the involved transactions, which feature a long tail. Because costs are projected over a 30-year period, the present value of estimated cash flows is used to compare against the baseline scenario. The present

value of cash flows was computed using a discount rate of 4%, which is consistent with the rate used to determine annuity factors.

Table 1. Act 447 Police and Other High Risk Employees Revised Pension
(All figures in millions of dollars)

Fiscal Year Ending	Base Scenario			Fiscal Year Ending	55% of Salary			Change
	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense		Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	
6/30/21	61	5	66	6/30/21	61	7	68	2
6/30/22	55	7	62	6/30/22	55	10	65	3
6/30/23	44	11	56	6/30/23	44	15	60	4
6/30/24	30	17	46	6/30/24	30	23	52	6
6/30/25	17	21	38	6/30/25	17	29	46	7
6/30/26	7	25	32	6/30/26	7	34	41	9
6/30/27	2	26	28	6/30/27	2	36	38	9
6/30/28	0	27	27	6/30/28	0	36	37	10
6/30/29	0	27	27	6/30/29	0	36	36	9
6/30/30	0	26	26	6/30/30	0	36	36	9
6/30/31	0	26	26	6/30/31	0	35	35	9
6/30/32	0	26	26	6/30/32	0	35	35	9
6/30/33	0	25	25	6/30/33	0	34	34	9
6/30/34	0	25	25	6/30/34	0	34	34	9
6/30/35	0	24	24	6/30/35	0	33	33	9
6/30/36	0	24	24	6/30/36	0	32	32	8
6/30/37	0	23	23	6/30/37	0	32	32	8
6/30/38	0	23	23	6/30/38	0	31	31	8
6/30/39	0	22	22	6/30/39	0	30	30	8
6/30/40	0	22	22	6/30/40	0	29	29	8
6/30/41	0	21	21	6/30/41	0	28	28	7
6/30/42	0	20	20	6/30/42	0	28	28	7
6/30/43	0	20	20	6/30/43	0	27	27	7
6/30/44	0	19	19	6/30/44	0	25	25	7
6/30/45	0	18	18	6/30/45	0	24	24	6
6/30/46	0	17	17	6/30/46	0	23	23	6
6/30/47	0	16	16	6/30/47	0	22	22	6
6/30/48	0	15	15	6/30/48	0	21	21	5
6/30/49	0	14	14	6/30/49	0	19	19	5
6/30/50	0	13	13	6/30/50	0	18	18	5
PV of Cash Flows	196	347	542	PV of Cash Flows	196	470	666	124

Act 71 of 2019

Under the recently passed Act 71 of 2019, police officers can now opt to pay into Social Security. However, we estimate that most Act 447 police members will not actually benefit from Act 71, as they are less than 10 years away from attaining the mandatory retirement age, and thus will not be able to meet the credit requirement for receiving Social Security benefits upon retiring from the Puerto Rico Police. Act 447 police members could potentially get another job in order to complete the remaining credits, but it is difficult to determine how many would be willing or capable of doing so.

Given these uncertainties, we estimate that the proposed pension revision will directly benefit those Act 447 police members who are unlikely to meet the criteria for collecting Social Security benefits upon retirement. On the other hand, Act 447 police members who are more than 10 years away from retiring, and thus likely to meet the credit requirement, were excluded from the analysis.

SUMMARY OF RESULTS

The modifications introduced by Act 81-2020 to the pension revision initiative produce a \$35 million increase in the actuarial cost when compared to the original provisions stated in Senate bill 1623. The pension revision for Act 447 state police and other high-risk employees as per Act 81-2020 is expected to have an actuarial cost over a 30-year period of \$124 million (present value terms). In contrast, the actuarial cost under the provisions of Senate Bill 1623 was expected to be \$89 million. The amortization value for the pension revision as per Act 81-2020 is of \$7.2 million per year over the projected timeframe. The actual breakdown of the actuarial cost over the 30-year period can be seen on Table 1.

As was the case before, the ASR management maintains there is no need to identify additional sources of revenue to fund the pension revision initiative. As per our discussions with the ASR management, the initiative will be funded from the same sources currently used to cover payroll expenses. The pension revision, however, will reduce the Puerto Rico Police Department's available budget to hire new recruits to replace Act 447 police members. The same can be said of every government agency with high-risk employees. The estimated budget reduction is estimated to be \$124 million over a 30-year period —the difference between the current benefits paid and benefits proposed under Act 81-2020. Budget neutrality can be achieved by limiting the hiring of new recruits to fill the vacant posts, or by hiring at lower rates.

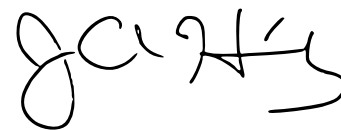
We relied upon on data supplied by ASR to develop our cost projections. To the extent that the data provided is inaccurate, the results of this analysis may need to be revised.

It is our opinion that the projections presented here are based on generally accepted actuarial practices, and consistent with the American Academy of Actuaries' Actuarial Standards of Practice.

Please let us know if you have questions,



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